REMARKS

Claims 1-9 are active. The certified copy of the priority document has been received. The cited references in the Information Disclosure Statement have been considered where initialed. The drawings are objected to. The specification is objected to. Claims 5 and 8 are objected to. Claims 1-4 and 6-7 are rejected under 35 USC 102 as being anticipated by Sakai '994. Claims 5, 8 and 9 are rejected under 35 USC 103 as being unpatentable over Sakai in view of Duthaler '3320.

An amended specification, amended drawings and amended claims are submitted for the Examiner's reconsideration.

Formal Matters

The Drawings

Amendment is made to the drawings Figs. 1b-1d, sheet 1, and Figs. 3b-3g, sheet 3 to meet the objections thereto. In particular, different parts are assigned different corresponding reference numerals. Fig. 1d is corrected as it was inconsistent with the description [00057] where it is stated:

> "at least one of the two structured electrodes, namely the bottom (first) structured electrode 2' and the top (second) structured electrode 5", is provided adjacent to the insulator layer 4 and suitably embedded in one of the semiconductor layers 3' and/or 6."

In the prior Fig. 1d, however, neither electrode 5" (as presently numbered) nor electrode 2' are adjacent to the insulator layer 4. Electrode 5" is next to a semiconductor layer 6 and electrode 2' is next to a semiconductor layer 3'. Thus Fig. 1d is amended to be consistent with this description. No new matter is introduced as the embodiment of Fig. 1d corresponds to the written description as noted and also to other embodiments of the other figures generally as is evident by comparison of the figures. Applicants believe that the drawing figures are correct as amended and respectfully request that the proposed drawing corrections be approved.

The Specification

Amendment is made to the specification to correct the designated reference numerals to be consistent with the amended figures, to correct minor typographical errors, to improve the form of the specification and to meet certain of the objections to the specification made in the Office Action. See the enclosed Substitute Specifications including one copy showing the changes and one clean copy. The specification is also amended to add paragraph numbers. Paragraphs [00012] and [00057] were noted as containing errors and inconsistent with the figures. For example paragr. [00057] was not consistent with Fig. 1d as the original stated that an electrode was adjacent to the insulator when in fact it is adjacent to a semiconductor layer similar to Fig. 1e. Also similar to and consistent with Fig. 1e, this paragraph [00057] is amended to state that the two semiconductor layers are opposite n and p types. Also paragraph [00012] is amended as this too was inconsistent with the corresponding figure 1e.

The Action in paragraph 8 objects to the specification at page 10, line 1, (parag. [00051] of the substitute specification) suggesting the semiconductor layers should be 3, 6" and not 3, 5". This is error as there is no semiconductor layer 6 in Figs. 1b and 3b. In accordance with amended figures 1b and 3b, the respective semiconductor layers have amended reference numerals 3', 3".

Page 11, line 1, is objected to wherein the insulation layer has the incorrect reference numeral. This is corrected. See the Substitute Specification paragraph [00056].

Page 13, line 24, [sic line 29] is objected to and substitute language is suggested. Applicants traverse this objection as being incorrect and the original language is acceptable as is. The suggested language changes the intended

meaning and is wrong. This language is in paragraph [00068] of the amended specification.

The Claims

Claims 5 and 8 are objected to. Applicants traverse these objections as being incorrect and not acceptable. The suggested amendments change the intended meaning of these claims. These claims are grammatically correct where noted. Claim 5 depends from claim 4 which calls for "at least one of said first and second electrodes is a structured electrode." Therefore the term "the at least one" (underlining added) is correct since the at least one is expressly called for in claim 4. To eliminate the term "the" is improper.

Claim 8 is correct as is and calls for "wherein at least one of said first and second electrodes is a structured electrode." This clause does not call for "the at least one structured electrodes" as asserted.

Applicants believe that the objections based on formal matters are met and this basis of the rejection should be withdrawn.

The Substantive Issues

Claim 1 is rejected as being anticipated by Sakai. Amended claim 1 is believed to be patentably distinguishable from this reference. Sakai shows a device with at least two semiconductors, a crystal bulk 11 and a depletion layer 19 within the bulk 11. These semiconductors are sandwiched between multiple electrode layers, such as layers 16 and 17 at the top of the device and layer 18 at the bottom. Layer 19 is referred to as a depletion layer in that charge carriers decrease in this area. There are further adjacent layers which are all semiconductors. See col. 2, lines 5-11 for example. These semiconductor layers comprise the pn junctions such as 12, 14 and 15 in Fig. 1 and corresponding structures in the other figures as well.

The pn junctions are semiconductor regions. These regions are adjacent to and in direct contact with the electrodes such as electrodes 13, 16 and 17, Fig 1. The pn junctions in Fig. are shown entirely in contact over the entire metal region of the electrodes 13, 16 and 17. Note the plastic cross section next to the electrodes which are not part of the electrodes in Fig. 1. The other figures are consistent with Fig. 1 in this respect. See also the specification col. 2, lines 1-23. Thus this reference contemplates a pn semiconductor junction next adjacent to and situated between the so called insulator layer.

This is different than amended claim 1 which calls for:

> an insulator layer between the first and second electrodes in direct ohmic contact with the first electrode

The so called insulator of Sakai, the depletion region 19 of the semiconductor bulk layer 11 portion 19, is not in direct ohmic contact with any of the electrodes due to the pn junctions which are not insulators. In contrast, this aspect of claim 1 has support in applicants' figures 1b and 3a-3g illustrating such direct ohmic contact. This is to be distinguished from applicants' figs. 1d and 1e which are somewhat similar to Sakai. Consequently, Sakai does not suggest or anticipate what is claimed. His approach to the problem is different than applicants' Figs. 1b and 3a-3g as compared to applicants' Figs. 1d and 1e. These latter figures plainly are different embodiments as discussed in applicants' specification. Sakai does not suggest or disclose such embodiments. Duthaler is of no help with regard to amended claim 1, which is believed allowable for these reasons.

The remaining claims 2-9 include all of the structure of claim 1 amended and thus are believed allowable at least for these reasons and for the particular structures claimed therein.

Since claims 1-9 have been shown to be in proper form for allowance such action is respectfully requested.

While no fee is believed due, the Commissioner is authorized to charge any fee that might be due for this paper or credit any overpayment to deposit account 03 0678.

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